

**EPA Comments on the Pennsylvania  
Draft Phase I Watershed Implementation Plan**

This document provides the Pennsylvania Department of Environmental Protection (DEP) with the results of the U.S. Environmental Protection Agency's (EPA) evaluation of Pennsylvania's draft Phase I Watershed Implementation Plan (WIP). The document expands upon the conference call between DEP and EPA staff on September 21, 2010 and the letter and WIP Evaluation Fact Sheet that Regional Administrator Shawn Garvin sent to Secretary Hanger by letter on September 24. This enclosure describes in more detail EPA's key evaluation comments and specific ways in which Pennsylvania can improve the Phase I WIP. EPA anticipates that this enclosure, coupled with subsequent meetings and calls among EPA and DEP staff, will provide sufficient detail for Pennsylvania to improve its final WIP due to EPA on November 29, 2010, and the Phase II WIP in 2011. EPA looks forward to meeting with DEP as soon as possible to further this dialogue and to reviewing revised WIP scenario runs starting as early as this week.

**Section I: Overview of the WIP**

Thank you for the time and effort DEP has invested in order to submit Pennsylvania's WIP by September 1, 2010. EPA appreciates Pennsylvania's partnership in this key step for the development of the Chesapeake Bay TMDL. EPA looks forward to working with Pennsylvania to enhance the Phase I WIP, and thus strengthening the implementation basis and reasonable assurance for the Bay TMDL. These are key tools in our collective effort to restore local streams and the Chesapeake Bay watershed.

EPA commends Pennsylvania for involving stakeholders through the WIP Management and Workgroup teams during development of the draft Phase I WIP. Stakeholder input is evident through connections being made in the WIP between local priorities and Bay TMDL implementation, such as rural economic development opportunities through innovative new agricultural technologies. EPA also appreciates the overarching themes of milestone implementation and tracking; innovation and trading; and improved compliance, especially with agriculture and stormwater, that are articulated in the WIP's introduction. However, there was insufficient detail on quantifying the gaps, proposed gap-filling strategies and associated actions, and timeframes to assure that the necessary reductions would be achieved. EPA is concerned that the WIP falls short in meeting the nutrient targets, given the large amount of reductions Pennsylvania is responsible for to meet the Bay TMDL.

When reviewing each of the seven Bay jurisdictions' draft WIP submissions, EPA evaluated whether the allocations assigned by the jurisdiction met the July 1 and August 13 nutrient and sediment allocations; whether the jurisdiction provided assurance that the strategies outlined in the WIP will achieve and maintain the wasteload and load allocations; and whether there is sufficient information for permit writers to develop permits that meet the wasteload allocation in the TMDL. These are three critical areas each jurisdiction's WIPs must address.

Table B2 within Pennsylvania's WIP exceeds the statewide phosphorus allocations by 11% and statewide sediment allocations by 1%. Table B2 meets the statewide allocation for nitrogen, though some basins exceed the July 1 allocations.

There are serious discrepancies between Pennsylvania's Table B2, the WIP document, and "what-if" scenario input decks previously submitted to EPA that need to be corrected in the final Phase I WIP. The following discrepancies decrease EPA's assurances that load reductions will be achieved and maintained:

- Table B2 identifies 16.1 million pounds/year nitrogen delivered from forests to the Bay in 2025. However, the most recent what-if scenario run by EPA in August 2010 and the 2009 progress run indicate approximately 23 million pounds of nitrogen delivered to the Bay from Pennsylvania forests. The WIP does not explain the 30% load reduction.
- Table B2 identifies 2.3 million pounds/year nitrogen delivered from onsite septs to the Bay in 2025. However, the most recent what-if scenario run by EPA in August 2010 and 2009 progress runs indicate approximately 3.3 million pounds nitrogen delivered to the Bay. Again, the WIP document does not explain this 30% load reduction.

To meet EPA's expectations for reasonable assurance, as articulated in the April 2, 2010 *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans*, Pennsylvania will need to:

- Provide a baseline for compliance and implementation rates of existing programs
- Provide a detailed implementation schedule for how the proposed strategies will achieve the required load reductions between 2009, 2017, and 2025
- Provide more detailed gap-closing strategies that demonstrate how Pennsylvania will meet the nutrient and sediment targets with detailed actions and timeframes and ways to assure these reductions will happen
- Include contingencies for funding deficiencies such as Act 167

Pennsylvania is relying, at least in part, on voluntary implementation of certain BMPs to achieve some of the load reductions required from agriculture, stormwater, and forests. The WIP needs to contain greater detail on incentives for installing BMPs, as well as a demonstration of how the BMPs will be verified to ensure that the appropriate controls are properly designed, installed, and maintained. The WIP also needs to specify what the consequences or penalties will be for false reporting or improper installation or maintenance of these BMPs.

EPA recognizes that this is a difficult economic time to develop contingencies addressing funding and programmatic deficiencies. However, the restoration timeline is spread out over the next 7-15 years and we are interested in hearing what specific contingencies the Department will be pursuing along with stakeholders to close the gap in during that time frame or sooner.

EPA is proposing allocations in the draft TMDL that reflect parts of Pennsylvania's draft WIP which EPA judged to be most strong and effective, along with high level backstop allocations to Pennsylvania's point sources. EPA established those high level backstop allocations to ensure that each basin hits the nutrient and sediment allocations in order to ensure practices are in place by 2017 to achieve 60% of the necessary nutrient and sediment reductions and by 2025 so that water quality standards can be achieved and maintained in all tidal segments of the Bay and its tributaries. The backstop allocations are discussed in further detail in Sections III and IV.

## **Section II: Addressing Sector Area Concerns & Opportunities for Improvement**

### **Agriculture: Serious Deficiencies in Gap-Filling Strategies**

There are several key areas that need to be addressed in order to ensure that agricultural load allocations will meet the 2017 and 2025 target milestones. On January 29, 2010, EPA sent a letter to Mr. Glenn Rider of Pennsylvania DEP regarding the proposed Chesapeake Bay Water Quality Initiative and recommended that DEP expand on and further develop specific strategies and recommendations in the draft WIP.

Specifically, the letter recommended that DEP provide a detailed program capacity description, gap analysis, and strategies with timeframes to fill gaps for existing agricultural programs. The draft Pennsylvania WIP does not address this recommendation. In addition, the draft WIP does not specify the baseline requirements that agricultural operations must achieve before the operation can generate nutrient trading credits. EPA strongly recommends that Pennsylvania address these areas when finalizing the Phase I WIP.

Another key area that needs to be addressed is the AFO Compliance and Enforcement Strategy. Pennsylvania does not have an acceptable coordinated and comprehensive AFO Compliance and Enforcement Strategy at this time. Concentrating on small dairy operations, especially considering the large number of these types of operations, raises concerns over the cumulative water quality impacts based on the level of non-compliance with baseline Pennsylvania regulatory requirements. Pennsylvania could consider expanding their CAO program to small dairies and could commit to revise their requirements for erosion and sediment control, nutrient management plans, and manure management plans to incorporate agricultural implementation measures described in EPA's *Section 502 Guidance for Federal Land Management in the Chesapeake Bay Watershed* released on May 12, 2010.

As the WIP currently stands, there is no detailed plan for ensuring compliance with existing programs. Based on EPA inspections in Pennsylvania, there appears to be a high-level of non-compliance with existing state programs for farm conservation and nutrient management plans. Pennsylvania needs to discuss, based on the information developed in investigations on operations in Watson Run and now presently in Muddy Run, the number of dairy and other animal sectors that have small operations that may not meet baseline requirements. For many small dairy operations, EPA expects to know DEP's basis for estimating compliance rates. EPA is concerned from a reasonable assurance standpoint that many of these small operations that should be meeting baseline requirements have not yet developed and/or implemented even conservation and manure management plans.

If Pennsylvania continues to rely on Conservation Districts for implementing and inspecting its agricultural programs, it must specify in greater detail within the WIP how the districts will ensure that the farm communities are in compliance with state regulatory requirements. EPA expects the WIP to include programmatic and resource commitments to ramp up compliance and enforcement, as well as verification that conservation practices are implemented. Pennsylvania

could put in place a meaningful compliance assurance program that is targeted towards an inspection-based approach.

The WIP does not include a schedule for key program-building and implementation milestones which demonstrate how the proposed BMPs will achieve the required load reductions between 2009, 2017 and 2025. In fact, EPA's review of BMP implementation rates in the "what-if" scenario input deck submitted in August compared to implementation reported for the 2009 progress run show a significant increase in implementation rates that are not supported in the WIP document.<sup>1</sup> Some examples include:

- Pasture management: 2009 was 9%, compared to 96% in the "what-if" scenario
- Swine precision feeding: 2009 was 0%, compared to 98% in the "what-if" scenario
- Dairy precision feeding: 2009 was 0%, compared to 75% in the "what-if" scenario

Quantifying the gap and outlining how that gap will be filled with specific activities and timeframes is critical for demonstrating assurance that reductions can be achieved in the agricultural sector. Pennsylvania mentioned that its biggest challenge was ensuring compliance with existing regulations, but there is no detailed plan for how to increase compliance beyond what is written about the targeted watershed approach. EPA needs more detail on how many farms can be reached, by how many staff, within what timeframe and the resulting nutrient and sediment reductions. The Maryland draft Phase 1 WIP submitted to EPA on September 1, 2010 provides an example of an acceptable gap analysis.

Pennsylvania seems to be relying on implementation of new technologies to drive a sizeable nutrient reduction (i.e., estimated 42 digesters in 40 counties) and to generate nutrient trading credits. While EPA recognizes that technology innovation is an important part of the Bay restoration effort, Pennsylvania needs to provide justification for 27 million lbs of nitrogen reduction from this technology in the WIP for EPA to have assurance that these reductions could be in place by 2017 or 2025. Part of this justification should explore the regulatory drivers and funding sources or incentives necessary to create such digesters.

Pennsylvania should also address in the final Phase I WIP how Pennsylvania will deal with the phosphorus imbalance in animal ag-dominated regions of Pennsylvania (e.g. south-central Pennsylvania). It is unclear whether the revisions to the Manure Management Manual by themselves would or could address this imbalance in phosphorus-saturated soils and prevent over-application of phosphorus through manure. Regarding the poultry industry, Pennsylvania could consider greater engagement with poultry integrators to find solutions to manure management. This engagement could emphasize alternative uses of manure, which Pennsylvania's WIP makes clear is a priority for the Commonwealth.

### **Urban Stormwater: Serious Deficiencies in Gap-Filling Strategies**

As you are aware based on the letter from J. Capacasa (EPA) to J. Hines (PADEP) dated July 9, 2010, EPA has clarified for the Department that municipal separate storm sewer system (MS4)

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<sup>1</sup> EPA uses the August 20 what-if scenario for estimating WIP implementation rates because Pennsylvania's September 1 submission did not include BMP implementation rates for sources other than wastewater treatment plants to support the nutrient and sediment reductions identified in Table B2.

program requirements clearly extend not only to the conveyance system (pipes and roadways) but to the entire urbanized area. Pennsylvania's draft WIP describing the stormwater program is not consistent with the regulatory definition of "MS4", 40 C.F.R. § 122.26(b)(8), nor does it align with EPA's expectations as outlined in the letter of November 4, 2009 and the *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans* distributed April 2, 2010. Loads from stormwater draining to an entire system should appear in Pennsylvania's wasteload allocation. The WIP should describe how wasteload allocations are modified in Pennsylvania, and further how the state will revise its MS4 program to implement the federal MS4 definition -- including a more accurate identification of the boundaries of the Phase II MS4s systems that is consistent with the NPDES permit program requirements. The WIP should also address how the state plans to improve upon the low level of MS4 compliance by Phase II communities.

To prevent increases in loads from new development and redevelopment within MS4-regulated areas, Pennsylvania should include in its final Phase I WIP and reissuance of MS4 permits a strong and enforceable performance standard for discharges occurring from these activities. EPA believes that such a standard is likely to be most effective if it is based on a volume or flow metric and formulated as a retention (not detention) standard with the objective of stable hydrologic conditions. Also, the state needs to provide a more detailed description of scope and enforceability of these new and redevelopment standards. In that regard, EPA does not believe that simply relying on redevelopment at the current rate (which occurs based on other drivers besides water quality) actually constitutes a retrofit program. Pennsylvania needs to provide a rational, model-based estimate of how much water quality improvement is expected to actually be achieved by 2017 and 2025 at the current rate of redevelopment. Pennsylvania should also provide a plan and schedule for developing and implementing a robust retrofit program, which should include: (1) a strong performance standard for all retrofits; (2) a requirement for stable hydrology in receiving streams as an objective; and (3) a reasonably aggressive implementation schedule.

Given the aggressive stormwater reduction targets proposed by Pennsylvania in its draft WIP, it seems highly likely that it would be necessary to also regulate discharges from new development outside of urban areas in order to attain these reductions. However, the WIP does not include a schedule for key program-building and implementation milestones that demonstrate how proposed nutrient and sediment controls will achieve the required load reductions between 2009, 2017 and 2025. In fact, similar to the agriculture sector, EPA's review of stormwater management implementation rates in the "what-if" scenario input deck submitted in August compared to implementation reported for the 2009 progress run show a significant increase in implementation rates that are not supported in the WIP document. Some examples include:

- Sediment and Erosion Control; 2009 was 23%, compared to 100% in the "what-if" scenario
- Urban Nutrient Management; 2009 was 0%, compared to 30% in the "what-if" scenario

To prevent increases in loads from new development outside of MS4-regulated areas, EPA recommends that Pennsylvania establish a mechanism to regulate additional loads from new development in such areas, such as revised state rules, strengthened state construction general permits and residual designation authority. Pennsylvania should include a proposal in this regard in its final WIP, as well as any proposals to implement additional BMPS like turfgrass fertilizer

restrictions through state-wide regulation, even if these proposals are just for contingency planning.

EPA is also concerned that many of the relatively strong stormwater concepts described in the WIP other than specific state stormwater regulations rely on mechanisms where the enforceability is not evident, such as policy statements, guidance documents and manuals. Moreover, the emphasis in the WIP is on planning (*i.e.*, Pennsylvania Act 167), as opposed to actions required to increase the level of stormwater controls and/or enforcement and compliance. Further, it appears that Act 167 is unfunded, so EPA expects Pennsylvania to demonstrate how provisions of the Act have been implemented in the past and will continue to be implemented in the future. This concern is complicated by the fact that the draft WIP contains no contingency for gap funding if Act 167 is not available or does not result in adequate performance.

### **Wastewater – WWTPs and Onsite Systems: Serious Deficiencies in Gap-Filling Strategies**

EPA's main concern on the wastewater sector continues to be the methodology Pennsylvania plans to use to suballocate their aggregate loads to the nonsignificant municipal and industrial facilities and on-site systems. If an aggregate allocation is used for non-significant industrial facilities, Pennsylvania will need to develop and implement an accounting of the loads from each of the non-significant industrial dischargers to document how the discharges are accounted for within the aggregate load. EPA understands Pennsylvania's position that these facilities have relatively little impact on the Bay and that Pennsylvania does not see the need to reduce loads from these facilities much if at all. EPA expects that any facility that discharges nitrogen, phosphorus and/or sediment be identified, however. Further, DEP should identify the method to estimate the loading for each discharges in order to provide an adequate aggregated WLA for each facility in this sector.

Another key area of concern is the schedule for permits included in the WIP. Page 52 of the draft WIP states, "Phase 1 - cap loads were placed in permits and most become effective on 10/01/2010." The WIP document also states that Phase 2 and Phase 3 limits will mostly be effective on October 1, 2012 and October 1, 2013, respectively. In reality, many Phase 1 permits have been issued with limits that are not effective until after October 1, 2010 – some as late as 2014. The WIP must provide accurate timelines of when these permits will become effective, the concentration and/or load for which the permits will be based, and compliance schedules for when any necessary upgrades will be complete and the effluent limitations consistent with the Bay TMDL WLA effective and final.

As mentioned in its overall comments, EPA is concerned that Table B2 identifies approximately a 30% reduction in nitrogen loads delivered from onsite septic systems to the tidal waters of the Bay, but the WIP document only references connecting a small portion of onsite systems to sewer systems. EPA expects Pennsylvania to either identify strategies for reducing additional loads from onsite systems or increase the load allocation for these systems in the final WIP in order to avoid backstop allocations.

Finally, EPA does not find it credible or appropriate for Pennsylvania to allow credits to point sources for the retirement of onsite septic systems without more information on existing onsite

systems and loads. In the final Phase I WIP, Pennsylvania should include its method for assuring that onsite systems meet TMDL load allocations and only generate credits for sale to point sources if they achieve additional load reductions.

### **Growth: Serious Deficiencies in Gap-Filling Strategies**

Pennsylvania's offset program as described in the WIP should make several changes to meet EPA's expectations and avoid backstop allocations. First, the offset program does not appear to properly account for the water quality in the descriptions of credit generation from agricultural sources. Second, the generation of offset and trading credits should not be credited until the source achieves a baseline demonstrating adequate protection for local water quality as well as conformance with any TMDL allocation assumptions. Further, there is no discussion of how the core four agricultural practices (cover crops, nutrient management, no till, and buffers) establish baseline TMDL compliance that would generate credits for use as offsets. Finally, there needs to be verification that BMPs are properly installed and maintained if they are to generate credits.

It is also unclear how Act 167 will address new or increased loads from new construction, particularly if funding for this program has been zeroed out. MS4 and construction NPDES permits should require new or increased dischargers to offset any additional loads.

### **Section III: Backstop Allocations**

In order to meet the 2017 target and 2025 nutrient and sediment allocations, EPA has proposed a high level backstop allocation scenario for Pennsylvania in the draft Chesapeake Bay TMDL. While EPA will consider all comments and the final Phase I WIP, unless DEP significantly improves and submits a final Phase I WIP addressing the concerns raised in this evaluation, EPA expects to finalize a high level backstop allocation scenario in the Commonwealth.

High level backstop allocations for Pennsylvania point sources

- WWTPs: limit of technology (3 mg/L TN and .1 mg/L TP) and design flow for significant municipal plants
- MS4s: 50% of urban MS4 lands meet aggressive performance standard through retrofit/redevelopment; 50% of unregulated land treated as regulated, so that 25% of unregulated land meets aggressive performance standard; designation as necessary
- Construction: Erosion and sediment control on all lands subject to Construction General Permit
- CAFO production areas: Waste management, barnyard runoff control, mortality composting. Precision feed management for all animals. Same standards apply to AFOs not subject to CAFO permits except no feed management on dairies; designation as necessary
- Load from point source reductions redistributed to forest, septic, and agriculture sources as possible while still meeting July 1 and August 13 nutrient and sediment allocations

In addition, EPA also intends to continue the finer scale wasteload and load allocations (same level of detail as tidal states) for Pennsylvania in the final TMDL as a mechanism to increase

reasonable assurance and to ensure NPDES permits will be consistent with Chesapeake Bay TMDL wasteload allocations.

#### **Section IV: Other Federal Backstop Actions**

Pursuant to the December 29, 2009 letter from Regional Administrator Shawn Garvin to the Chesapeake Bay Principals' Staff Committee, EPA may consider applying other federal backstop actions in addition to those listed in Section III to ensure that jurisdictions develop and implement sufficient WIPs and achieve nutrient and sediment load reductions as evidenced through two-year milestones.

#### **Section V: Other Suggested Improvements/Final Comments**

In its June 11, 2010 letter to the Principals Staff Committee, EPA indicated that it would include for each jurisdiction a separate Temporary Reserve for both nitrogen and phosphorus for the purposes of WIP development and incorporating contingency actions. The Temporary Reserve is based on possible changes to nitrogen and phosphorus allocations that could result from two forthcoming model refinements to Phase 5.3 of the Chesapeake Bay Program Watershed Model.

In his July 1 letter to the Principals' Staff Committee communicating the major basin and jurisdiction nutrient allocations, EPA Regional Administrator Shawn Garvin announced that this reserve would be 5%. The Regional Administrator explained in that letter that the Agency expects jurisdictions to account for this 5% Temporary Reserve as an element of their contingency actions in their Phase I WIPs, in the event that the 2011 refinements to the Phase 5.3 Chesapeake Bay Watershed Model result in draft allocations lower than those provided on July 1, 2010. EPA expects Pennsylvania to incorporate this 5% Temporary Reserve into the final Phase I WIPs. Depending on the results of the 2011 model refinements, the Temporary Reserve will be revised or removed as appropriate during the 2011 Phase II WIP development process.

EPA looks forward to discussing these issues and providing additional suggestions to Pennsylvania at the upcoming one-on-one meeting with EPA.

#### **Section VI: Closing**

Thank you again for Pennsylvania's submission of the draft WIP on September 1, 2010. EPA appreciates Pennsylvania's interest in working with EPA to address these comments in advance of the final TMDL. EPA is requesting to meet with colleagues from Pennsylvania for a half-day session to further explain this feedback and to discuss in greater detail ideas for strengthening Pennsylvania's final Phase I WIP, due to EPA by November 29, 2010, and the Phase II WIPs that will be submitted in 2011. EPA requests that Pennsylvania provide its availability for a meeting the week of October 4<sup>th</sup> or October 11<sup>th</sup>, 2010.